

ABC Project Highlights

Project Name: I-80; Eastbound Structure #2C-326 at Atkinson Canyon
Project #/PIN #: F-I80-4(126)146 / 7607
Year Constructed: 2011
ABC Element(s): Precast Superstructures
Placement Method: Slide-in
Contracting Method: Design-Bid-Build

Project Description: For this design-bid-build project, the new, single-span superstructure was built on a temporary structure adjacent to the three-span existing bridge, and the new permanent abutments and walls were built respectively under and around the existing structure. The existing bridge was removed and the new structure moved in place using ABC methods by sliding the bridge over Teflon bearing pads in phases during the night on Friday and Saturday.

The temporary structure was constructed adjacent to the existing structure to support the superstructure and approach slabs of the bridge. The bridge move from its temporary to final location utilized a sliding mechanism and minor required changes were made to the released plans in order to allow the chosen sliding mechanism to work.

The bridge abutments were built under the existing bridge; temporary soil nail walls were constructed to support the existing structure abutments. The abutment type is a concrete cantilever retaining wall on micropiles with turn-back counterfort wingwalls and additional retaining walls on spread footings. The embankments satisfy owner requirements of 2:1 slopes and protect the environmentally sensitive Silver Creek, spring stream, and wetlands. The sleeper slab is a cantilever retaining wall type structure with precast and cast-in-place elements to facilitate fast and easy placement during the limited I-80 closure time. All sliding elements and mechanisms were designed for ease of construction and efficient bridge move and provided a complete plan package.

After the superstructure was constructed on temporary structure, adjacent to the existing structure, the sliding tracks were placed below the bearing pedestals (slide shoes) of the end diaphragms using hydraulic jacks. Teflon bearing pads were placed in the slide tracks and at approach ends. The existing bridge was removed in two phases. The precast sleeper sections were placed and the site prepared for the bridge slide. Two push jacks were used to push the bridge to the final location. After bridge placement, the roadway approaches were completed and the new bridge was opened to traffic. The bridge superstructure weight of 2600 kips with a skew of 42 degrees provided some of the major challenges of the ABC method.







